

ABSTRACTS

(The abstracts are divided into the following sections: syphilis (general, therapeutic, pathology); gonorrhoea (general, therapeutic, pathology); other venereal disease conditions; public health. After each subsection of abstracts follows a list of articles that have been noted but not abstracted. All subsections will not necessarily be represented in each issue.)

SYPHILIS (GENERAL)

Diagnosis of Hepatic Syphilis by Pneumoperitoneum. (Diagnostic par le pneumopéritoine d'un foie ficelé syphilitique. Aspect radiologique et laparoscopique.) BELBENOIT, S., and LOY, J. (1946). *Bull. Soc. méd. Hôp. Paris*, 62, 393.

The authors describe the use of pneumoperitoneum in the case of a 14-year-old girl who was suffering from ascites and who had an evening pyrexia of about 100·4° F. Mantoux tests and radiological examinations of the chest were negative and there was no wasting. A pleuroscope was inserted, after fluid withdrawal and air replacement, through a small incision in the left iliac fossa. The spleen appeared normal. The pelvis contained a little fluid, but there was no evidence of tuberculous peritonitis. A radiological examination was made after withdrawal of the instrument, and enough air still remained to show the irregular outline of the superior border of the liver. Pneumoperitoneum was performed, and the x-ray picture showed the liver to be a mass of rounded projections and deep furrows. An enlarged spleen was similarly outlined.

The endoscope was again inserted, 11 days after the first examination, at a point 4 fingerbreadths to the right of the umbilicus. The under surface of the pathological liver, with its projections and crevices, could be seen; and also varicose veins on the parietal peritoneum, analogous to the caput medusæ of the anterior abdominal wall. A Wassermann reaction was strongly positive, as was that of the blood of the patient's mother. A diagnosis of hepatic gummatosis due to congenital syphilis was made.

Between Oct. 4, 1945, and Feb. 20, 1946, 242 g. of potassium iodide was given by mouth; 10 injections of enesol (mercury salicylarsonate), 9 injections of acetylarsan (acetarsol sodium), and 12 injections of mercury were also administered. The patient was by now improved and ambulant. The ascites and pyrexia subsided. A further endoscopy was done, but no definite improvement in the appearance of the surface of the liver was noted.

R. R. Willcox

A Case of Myopia and Hereditary Syphilis. (Myopie et heredo-syphilis.) HERVOUET, F. (1946). *Paris méd.*, 36, 441.

SYPHILIS (THERAPEUTIC)

Temperature Regulation Changes in Congenital Syphilis. (Le alterazioni della termoregolazione nella sifilide congenita.) BOLLETTINO, A. (1946). *Pediat. Med. prat.*, 19-21, 331.

A case of "essential luetic fever" in a 3-months-old infant with congenital syphilis is described. According to Milian, pyrexia is present in 25% of cases of congenital syphilis, and the affected infants frequently show a marked thermic lability. Where secondary infection is absent the temperature does not usually rise above 38° C., apart from the acute initial stage of the variety called "septic lues." The fever in congenital syphilis characteristically precedes the manifestations of organic foci—for instance, those of osteochondritis, arthritis, hepatomegaly and splenomegaly, and lymph-node enlargement. The condition of the patient is influenced more by the nature of the organic lesion than by the temperature. Another frequent sign of congenital syphilis in the infant is an abnormally low temperature, or a disorder of the temperature regulation in which hyperthermy and hypothermy alternate. The latter is often refractory to mercury and responds only to arsphenamine preparations. In "essential syphilitic fever" there are no other signs of disease.

In the case described the parents were undergoing antisyphilitic treatment. When the child was 2 months old rises of temperature up to 38·5° C. were first noticed. As a lung infection was suspected, a sulphonamide preparation was prescribed. The temperature curve, however, assumed the character of a continuous fever, between 38·5° and 39·9° C. The nutritional condition (after a febrile phase of 1½ months) was only slightly affected; the skin was pale and dry, and the muscles hypotonic and hypotrophic. There was a diffuse distribution of small swollen lymph nodes, while the liver and spleen were enlarged with sharp margins and of hard consistency. The urine contained albumin ++ and some casts. Blood examination showed anæmia, lymphocytosis, and eosinophilia. The Wassermann test was positive. Acute or subacute infections of gastro-intestinal, pulmonary, or oral origin were excluded by the regular increase of weight, in spite of prolonged fever, in an artificially fed child. Typhoid fever was excluded by blood and serum examination; there was no sign of tuberculosis; the moderate monocytosis excluded

glandular fever, and the infant did not show the other characteristics of this condition. X-ray examination showed no local syphilitic changes in the bones.

During the first 2 weeks treatment consisted of mercury inunctions and a sulphonamide preparation orally; protein shock therapy was also used [names of preparations are not given]. In this period the condition of the kidneys improved rapidly (albumin and casts disappeared from the urine), and the size of the liver and spleen diminished progressively. The fever remained unaltered, but in spite of this the infant showed a regular increase in weight and improvement of nutrition in the third week. Treatment with neoarsphenamine injections was started while the mercury inunctions were continued. With the introduction of this treatment the fever terminated by crisis and the blood count became normal. The negative response to sulphonamide and protein therapy, the partial effect of the mercury treatment, and the striking change brought about by the arsenical injections are taken as proof of the essential syphilitic nature of the fever.

This "essential syphilitic fever" is regarded as an expression of syphilitic toxæmia together with either an organic hypersensitivity or a particularly virulent infection in an individual with low immunity.

Hilde Eisner

Bismuth Treatment of Early Syphilis. SOCIÉTÉ FRANÇAISE DE DERMATOLOGIE ET DE SYPHILIGRAPHIE (1946). *Ann. Derm. Syph.*, 6, 279.

In the last few years certain French syphilologists have been using bismuth almost exclusively in the treatment of early syphilis. The arsphenamines have been abandoned because of their toxicity.

Lortat-Jacob reports on 150 cases of early syphilis treated with bismuth alone. Negative reactions were obtained in 98% of the cases of primary serum-positive syphilis (90) and in 84% of the cases of secondary syphilis (60). Burnier gives the following results in 800 cases treated by various methods: (a) with neoarsphenamine alone, 66% of cases were serum-negative a month after the first course; (b) with neoarsphenamine and bismuth, 72% were serum-negative after 1 course, and 82% after 2 courses; (c) with bismuth alone, 80% serum-negative after 1 course of 12 injections, and 96% after 2 courses. There were no grave toxic effects in the cases treated with bismuth alone, but 3 patients died during the period of survey while under treatment with arsenic, either alone or with bismuth. Fernet and Guibert report reversal of positive tests in 28% with one course of bismuth alone, and prefer mixed treatment for cases of early syphilis.

Gaté and Cuilleret treated 310 cases of early syphilis with bismuth alone and attained serum-negativity after 1 course in 48%, after 2 courses in 29%, after 3 courses in 10%, and after 4 courses in 3% of cases. In 63 cases treated with arsenic and bismuth, blood tests were negative after 1 course in 42% and after 2 courses in 37%. They conclude that there is no advantage in respect of

serological response in using mixed treatment, and state that bismuth alone is sufficient treatment both for attack and for maintenance in most cases of early syphilis. Toxic effects and bismuth resistance are rare.

Garnier retained his confidence in the tervalent arsenicals, which, he said, when associated with bismuth, rapidly sterilized the lesions of early syphilis and gave the greatest chance of clinical cure.

James Marshall

Use of Penicillin in the Treatment of Syphilis in Pregnancy. COLE, H. N., AYRES, S., BARR, J. H., GENATIOS, T., HELD, B., MURPHY, W. W., PRINTZ, D. R., and STRAUCH, J. (1946). *Arch. Derm. Syph.*, Chicago, 54, 255.

Since October, 1943, 730 patients with early syphilis have been treated with penicillin at the University and City Hospitals of Cleveland. The possible effects of alterations in the constitution and potency of commercial penicillin during this time have not been assessed. The routine clinical and pathological examinations are described. Lumbar punctures were made on all patients, and if the fluid was abnormal, tests were repeated on discharge of the patients and thereafter, if possible, every 3 months. Serum tests for syphilis were made every 2 or 3 months after discharge. Acute surface lesions heal rapidly and may clear up in 1 to 3 weeks. Dark-field examinations of open genital lesions usually become negative in 12 to 18 hours. The titre of positive serum tests may rise for a week or more after beginning treatment, and then gradually drop to negativity in from 4 to 12 weeks. Reactions to penicillin included local pain with certain batches, Herxheimer effects early in treatment, herpes labialis, urticaria, and multi-form and nodose erythematosa.

The authors believe that syphilis in pregnancy is a suitable condition for the use of penicillin, as they discovered no danger of complications or of damage to the child. Even with very small doses the child may be born free from syphilis, but to avoid the possibility of relapse in the mother doses of 2,400,000 units or over must be used. Successful results as regards the child can be achieved even at the end of pregnancy. The necessity for the use of quantitative serum tests in a check-up on the mother and child is stressed.

James Marshall

Neurosyphilitic Patients Treated with Penicillin. Probable Herxheimer Reactions. TUCKER, H. A., and ROBINSON, R. C. V. (1946). *J. Amer. med. Ass.*, 132, 281.

The authors believe that it is important to record two examples of probable Herxheimer reaction during penicillin treatment of neurosyphilis. The first patient was a woman with dementia paralytica. Treatment comprised 50,000 Oxford units of sodium penicillin given intramuscularly in normal saline every 3 hours to a total of 10,000,000 units. After 30 hours the patient's rectal temperature had risen to 100.8° F., and at 42 hours a prolonged series of clonic

convulsions began, affecting the right arm and leg and the right side of the face. Swallowing was impaired and plantar responses were extensor. In spite of anticonvulsant drugs the convulsions continued for 15 days, penicillin being given all the time. Eight days later the patient left hospital, and clinical improvement continued for the 6 months during which the patient was followed up.

The second patient had penicillin therapy similar to that used in Case 1. After 8 hours the patient had a rectal temperature of 102.6° F., which returned to normal spontaneously. Thirty hours from the beginning of the therapy he was found on the floor, moaning and throwing his body from side to side. There was vomiting, incontinence, disorientation, restlessness, and meningeal irritation; plantar responses were extensor. Lumbar puncture gave a clear, sterile fluid under normal pressure but the pleocytosis had increased to 277 cells per c.mm., of which 52% were polymorphonuclear cells. The rectal temperature rose to 104.8° F. Sedation was required for 3 days, after which the patient recovered.

The authors believe that these reactions were probably examples of the Jarisch-Herxheimer phenomenon. They do not consider that the convulsions in their own patients were due to a direct irritative action on the nervous system since: (a) only insignificant amounts of penicillin were demonstrated in the spinal fluid; and (b) the convulsions ceased although penicillin was continued throughout in full doses. The penicillin used contained penicillin G, F, and K in unknown proportions, K probably being the predominant fraction, and the authors speculate whether differences between the various penicillin fractions are concerned in the production of irritative reactions in the nervous system.

S. M. Laird

Penicillin in the Treatment of Neurosyphilis. I. Asymptomatic Neurosyphilis. MOORE, J. E., and MOHR, C. F. (1946). *Amer. J. Syph.*, 30, 405.

Detailed results are presented of penicillin therapy in 48 patients with early and 43 with late asymptomatic neurosyphilis followed for an average period of 9 months after treatment. The authors' definition of asymptomatic neurosyphilis is "that form of syphilis in which neither symptoms nor abnormal clinical signs are present which direct attention to the nervous system, but in which the spinal fluid routinely examined is abnormal." The cases are subdivided into early and late asymptomatic neurosyphilis; the dividing line was arbitrarily chosen on the basis of duration of infection of less or more than 4 years. Treatment was by intramuscular injections of aqueous sodium penicillin, which were given every 3 hours day and night; the total amount of penicillin given varied from 0.06 to 6 mega units. None of the patients with early asymptomatic neurosyphilis developed any clinical evidence of neurosyphilis during the post-treatment observation period, which in no case was more than 18 months; and, as pointed

out by the authors, this period is too short to yield data of prognostic value.

The number of patients was considered to be too small to permit a detailed analysis of the results according to penicillin dosage, but the authors think there is no essential difference in the cerebrospinal fluid results in general in relation to dosage. It is recommended that for early asymptomatic neurosyphilis not less than 2.4 mega units of penicillin in 7½ days should be given; for late neurosyphilis, as well as for cases of early asymptomatic neurosyphilis with a paretic formula, the total should be not less than 4 mega units in 10 days.

V. E. Lloyd

Treatment of Gummatous Hepatic Syphilis with Penicillin. Report of Two Cases. TUCKER, H. A., and DEXTER, D. D. (1946). *Arch. intern. Med.*, 78, 313.

Two patients with gummatous hepatic syphilis were treated with penicillin. The first was a negress, aged 49, who was emaciated and chronically ill, and her liver greatly enlarged and tender, several large nodules being felt on its anterior surface. The spleen was palpable. The patient showed evidence of osteo-periostitis of the right femur and patella, and a loud blowing systolic murmur and an accentuated aortic second sound were heard. Pyrexia ranging as high as 103.2° F. was constant, and the Eagle test for syphilis gave a positive reaction. Penicillin was given (5,000 units intramuscularly 3-hourly for 64 injections in 8 days). The temperature became normal, the pain over the liver and in the knee diminished, and within a month the spleen could no longer be felt. Because of this excellent response a further course of penicillin was begun, 10,000 units being given 3-hourly for 60 injections in 7½ days to a total of 600,000 units, bringing the dosage of penicillin in the two courses to 920,000 units. The patient put on weight and was discharged from hospital. The size of the liver continued to decrease, until at the last examination, 686 days after starting treatment, its edge was felt only 3 cm. below the costal margin. The Eagle reaction was still positive.

The second patient, a 15-year-old white girl, had an enlarged tender liver down to the umbilicus as well as a palpable spleen. A nodule was seen and felt on the anterior surface of the liver. Eagle and Wassermann tests were positive. Biopsy of the hepatic nodule revealed large areas of necrosis surrounded by fibrous tissue, occasional scattered solitary tubercles, and a slight infiltration of mononuclear cells. The pathologist reported "probable gumma of the liver." She was given 40,000 units of penicillin intramuscularly every 3 hours for 80 injections—a total of 3,200,000 units in 10 days. The temperature rose to 100.4° F. 15 hours after the start of treatment, this being interpreted as a probable Herxheimer reaction. Her condition improved, until after 4 months the liver was practically normal in size. Though the Eagle reaction was still positive, the Wassermann was negative; the blood was normal and there was no clinical evidence of hepatic dysfunction.

[Although penicillin would appear to be an ideal therapeutic substance in hepatic syphilis, there would seem to be risk in giving so powerful a drug without preparatory bismuth treatment. In the first case a cardiac Herxheimer reaction was a possibility, especially in view of the raised pulse pressure and the accentuated aortic second sound.]

G. L. M. McElligott

Penicillin in the Treatment of Syphilis in Children.

YAMPOLSKY, J., and HEYMAN, A. (1946). *J. Amer. med. Ass.*, 132, 368.

The results are reported of treatment with penicillin in 54 congenital syphilitics and in 7 children with acquired primary and secondary syphilis. During 20 months the authors treated with penicillin alone 32 children with infantile congenital syphilis; 22 were watched for 12 to 20 months, 7 for 4 to 8 months, while the remaining 3 died from causes unconnected with the treatment. At first 40,000 to 50,000 units of sodium penicillin per kilo of body weight was given intramuscularly every 3 hours for a total of 60 doses in 7½ days, but when failures were observed the dosage was raised to 60,000 and 70,000 units. An immediate clinical response occurred in all patients. The serological tests became negative in 18 cases, decreased in titre in 5, but remained sero-resistant in 6. Harmless Herxheimer elevations of temperature occurred in 50% of cases; no other reactions were seen. Penicillin was effective in only 1 case of interstitial keratitis; 3 improved and 5 were unsatisfactory. No benefit resulted when penicillin was instilled locally. Three children with Clutton's joints (symmetrical hydrarthrosis) and 2 with juvenile general paralysis failed to respond clinically. In late congenital asymptomatic neurosyphilis the cell count and protein content of the cerebrospinal fluid were reduced rapidly in 6 patients, and became normal within 12 months in only 4 of these. The Wassermann reaction, however, has remained positive in every case. In one severe case of eighth-nerve deafness no change was detected, but hearing was improved in a milder case. The lesions in the 7 cases of acquired syphilis healed promptly and the spirochaetes disappeared rapidly, but in only 2 did the serological reactions become positive.

This study suggests that infantile congenital syphilis and early neurosyphilis respond well, and that interstitial keratitis, Clutton's joints, eighth-nerve deafness, and juvenile general paralysis are refractory; that is to say, that only a poor response is to be expected in the late manifestations of the disease.

[General experience suggests that the doses of penicillin employed were too small, and that much better results would be obtained if the dosage is raised to at least 100,000 units per kilo of body weight, and if penicillin is combined with bismuth and arsenical therapy.]

T. Anwyl-Davies

Inadequate Dosage of Penicillin in the Treatment of Syphilis. Report of three Cases. (Dosis insuficientes de penicilina. Comunicacion de tres casos.) BLADUELL, H. A. (1946). *Bol. Asoc. med. P. Rico*, 38, 210.

SYPHILIS (PATHOLOGY)

Value of Hoffmann's Lymph-node Puncture in the Diagnosis of Early Syphilis. (Der diagnostische Wert der Erich Hoffmannschen Lymphdrüsenpunktion bei frischer Syphilis.) WILDE, H. (1946). *Arzt. Wschr.*, 1, 93.

Erich Hoffmann first demonstrated in 1905 that lymph-node puncture is a valuable aid to the diagnosis of syphilis in its earliest stages. Positive results by this method may establish a diagnosis weeks before serum reactions become positive. *Treponema pallidum* can be found by lymph-node puncture in a very high percentage of cases of early syphilis—100% according to Photinos; over 90% according to Habermann and Mauelshagen. Specimens are collected in the following manner. After cleansing the skin a wide-bore needle on a tight-fitting 10-ml. syringe is plunged into the lymph-node substance. The lymph node is fixed between thumb and forefinger of the other hand and gently massaged while suction is applied continuously by the syringe and the needle is moved about. The needle is then withdrawn and its contents expressed on to a slide and prepared for dark-ground examination.

The author found *T. pallidum* by this method in 84 out of 100 cases of proved primary syphilis. In 34 cases a positive result was obtained at the first test, in 23 at the second, in 11 at the third, in 8 at the fourth, in 4 at the fifth, in 1 at the sixth, in 2 at the seventh, and in 1 at the eighth. *T. pallidum* was discovered in 49 of 78 cases with phimosis due to inflammatory conditions. Further investigation of the 29 negative cases, after dorsal slit, showed them to consist of 8 primary chancres, 12 soft sores, and 9 non-specific ulcers. The method is useful when *T. pallidum* cannot be found in sores which have been treated locally with antiseptic. In secondary syphilis positive tests were obtained in this manner in 44 of 63 cases—a smaller percentage of positives than in the primary stage.

J. Marshall

Permeability of Blood-Spinal Fluid Barrier in Infants and in Normal and Syphilitic Adults. KALZ, F., FRIEDMAN, H., SCHENKER, A., and FISCHER, I. (1946). *Arch. Neurol. Psychiat.*, Chicago, 56, 55.

The relative permeability of the blood-spinal fluid barrier in infants, normal adults, and syphilitic adults was investigated. Positive Wassermann reactions in the spinal fluid seldom occur without syphilitic involvement of the central nervous system; false positive reactions, however, have been found in patients with meningitis of bacterial or virus origin, the serum Wassermann reaction also being positive. The blood-spinal fluid barrier is presumably impaired in such cases by the meningeal inflammation. The spinal fluid of 16 new-born infants with syphilis was examined. Normal results were found in 4, evidence of syphilitic involvement of the central nervous system in 4, and moderately positive Wassermann reactions with normal cell counts, protein values, and colloidal gold curves in 8. In the last group the Wassermann serum reactions were positive in

dilutions of from 100 to 300, the spinal fluids giving positive reactions with 1 and 0.6 ml. and negative reactions with 0.4 ml., results suggestive of a passive transfer of reagin from the blood into the spinal fluid. The 4 infants with neurosyphilis, treated with sulpharsphenamine in the usual dosage, showed completely normal spinal fluids within a short period. This quick reversal of the spinal fluid to normal in very young children may be assumed to be due to an undeveloped barrier between blood and spinal fluid. Experimentally, a high permeability of the barrier has been found in new-born animals, gradually decreasing with the growth of the animal.

In the present investigation 4 groups of patients were tested, normal adults, adults with untreated neurosyphilis, adults with neurosyphilis who had received at least 1 year of treatment with fever therapy and/or pentavalent arsenicals, and non-syphilitic infants under 18 months of age. Walter's bromide test, which demonstrates normal, increased, or decreased permeability of the blood-spinal fluid barrier, was used, adapted to photo-electric readings. It was found that the values for infants were significantly lower than those for normal adults and were comparable to those given by adults with neurosyphilis. It is considered that, in the absence of other evidence, positive Wassermann reactions of the cerebrospinal fluid of syphilitic infants should not be taken as proof of neurosyphilis.

M. Mackenzie

Preservation of Virulence of *Treponema pallidum*.

Some Additional Laboratory Methods. STRATTON, E. K. (1946). *Arch. Derm. Syph., Chicago*, 54, 25.

The author describes experiments which resulted in mouse-to-mouse transfer of *T. pallidum* without the use of an intervening host, though rabbit inoculations were performed as an indicator of success. Twelve white mice were inoculated subcutaneously with chancre grafts from a rabbit's testicle (Nichols' strain). After a lapse of 6 months 6 of the mice were killed and the lymph nodes, spleens, and brains, were separately pooled and emulsified. None of these 3 pooled specimens showed *T. pallidum* on dark-ground examination, though all produced a specific orchitis after inoculation into a rabbit's testicle. Twelve more mice were then injected with each of the 3 emulsions, and, after a further 6 months, 6 from each group were killed and similar pooled emulsions prepared from the spleens, brains, and lymph nodes. On testing the virulence of these against rabbits, negative results were obtained with all specimens from those mice which had received emulsions of spleen and brain, and no further passage was found possible. Positive results were, however, obtained with all 3 emulsions prepared from the mice which had received the injection of pooled lymph nodes. The second positive lymph-node emulsion was injected into 12 more mice, and after 6 months the 3 emulsions were again prepared and tested against the rabbit as before. The pooled brain and spleen emulsions were avirulent, but the one prepared from lymph nodes produced a specific orchitis in a rabbit. Further similar passage was obtained with this lymph-node

emulsion into yet another series of mice, in which again only the lymph nodes were proved to be virulent.

Another series of experiments was conducted to assess the behaviour of infected syphilitic tissue in the frozen state. Two specimens each of rabbit lymph nodes, mouse brain, mouse lymph nodes, and mouse spleen were emulsified. No *T. pallidum* was detected in any of the emulsions though all would produce a specific orchitis in a rabbit. The emulsions were frozen and kept in a refrigerator at -78°C . for 1 year, when, after thawing in a water bath at 37°C ., they were injected into rabbits' testicles. All preparations of rabbit lymph node and mouse brain gave negative results. Both specimens of mouse lymph node caused small indurated nodules in which an occasional *T. pallidum* was found, while both mouse spleens produced voluminous orchitic swellings in which the organism was easily found 60 days after inoculation.

R. R. Willcox

A Simple Method for Performing a Wassermann Test on Anticomplementary Serum. TARAN, A. (1946). *J. Lab. clin. Med.*, 31, 1037.

Anticomplementary reactions in the Wassermann test are unsatisfactory because no result can be reported and it is necessary to obtain a second specimen of blood. An anticomplementary reaction is due to the fact that the patient's serum alone has the ability to fix complement; the author therefore tried the effect of saturating with neat complement the serum to be tested and then inactivating the mixture to destroy any excess of complement. The serum was then tested in the ordinary way and found to react normally. This technique was applied to 200 anticomplementary sera over a period of 15 months, known positive and negative sera and fresh specimens from the patients who provided the original anticomplementary sera being included as controls.

The majority of anticomplementary sera were positive. It was found that the addition of complement, as described, to known negative and positive sera used as controls did not affect the reactions. This method is not recommended in the case of sera which show much hæmolysis or heavy contamination; in such cases fresh specimens should be obtained.

[A much larger number of specimens should be tested before this technique is adopted as a routine, since weakly positive sera might be affected by the mere dilution; it is known also that the behaviour of certain sera is different when diluted with a known negative serum from what it is when diluted with saline.]

T. E. Osmond

Syphilitic Amyotrophy. Clinical-pathological Report of a Case Complicating Tabes Dorsalis. LICHTENSTEIN, B. W., and LUHAN, J. A. (1946). *J. Neuropath.*, 5, 321.

Liver Function Tests in Neurosyphilitic Patients with Induced Vivax Malaria of Pacific and Mediterranean Origin. LIPPINCOTT, S. W., MARBLE, A., ELLERBROOK, L. D., HESSELBROCK, W. B., ENGSTROM, W. W., and GORDON, H. H. (1946). *J. Lab. clin. Med.*, 31, 991.

GONORRHOEA (THERAPEUTIC)

Oral Penicillin in Gonorrhoea. BUSHBY, S. R. M., and HARKNESS, A. H. (1946). *Lancet*, 2, 783.

As a preliminary to the use of penicillin by the mouth in gonorrhoea, determinations were made of the amounts in the blood after the ingestion of tablets of calcium penicillin. After a single dose of 40,000 or 60,000 units, together with sodium citrate, taken an hour after breakfast, penicillin appeared in the blood within 30 minutes, reached a peak at about 1½ hours, but was not detected at 5½ hours. When the tablets were coated with a multilayer enteric protective, penicillin did not appear in the blood until after 2½ hours, and was not detected at 5½ hours.

After preliminary trials had shown that periods of treatment up to 12 hours were too short, 62 cases of gonorrhoea in men were treated with 6 doses of calcium penicillin, 40,000 units, and 1 g. of sodium citrate 3-hourly. Fluids were restricted to 1½ pints (852.37 ml.) during treatment. Serum penicillin levels were determined in 53 cases and showed considerable variations. The urethral discharge often became more profuse in the first few hours of treatment, and then became progressively less in amount and muco-purulent or mucoid in character 2 to 5 days later. The urine contained a few mucous threads up to the end of a week. Symptoms such as dysuria disappeared. Bacterial examination of smears every 2 hours showed normal gonococci to have been present up to 2 hours and in some cases up to 4 hours. Giant forms were seen up to the sixth hour after treatment. Cultures taken 2-hourly rarely grew gonococci after smears had become negative. Most of the cases were under observation for 6 months. The final assessment showed 4 failures and 2 reinfections. Two relapses had followed the use of the earlier trial scheme of treatment over 12 hours. Only 2 failures were encountered in the series of 62 cases receiving 6 doses of 40,000 units 3-hourly over 15 hours. One case developed acute epididymitis which was thought to be of non-specific origin.

A recommendation of this method of treatment for gonorrhoea in men is coupled with a warning of the importance of regular dosage, of the restriction of fluids, and of giving each patient short and concise instructions.

V. E. Lloyd

The Adequate Treatment of Gonorrhoea. HELLER, J. R. (1946). *J. vener. Dis. Inform.*, 27, 225.

Data are given from the most recent U.S. Public Health Service investigations on the use of penicillin in gonorrhoea by short-treatment schedules; certain previous studies of the same Service are also reviewed, and the possibility is indicated of reducing the incidence of gonorrhoea by the use of these short schedules in private practice. Two treatment schedules were studied: one that could be completed in 2 hours and one which required 3. A study was made of 396 patients, in all of whom diagnosis was confirmed by a positive culture; 83% were observed for 10 days or longer, the

remainder for 6 to 9 days. The 2-hour schedule was adopted for 255 patients, who received 200,000 units of sodium penicillin dissolved in 6 ml. of water in 3 intramuscular injections, of 50,000, 50,000, and 100,000 units respectively, at hourly intervals. The 3-hour schedule was given to 141 patients, and consisted of 40,000, 40,000, 40,000, and 80,000 units intramuscularly. Among the patients observed for 10 days or longer, 94% were cured by the 2-hour schedule and 96% by the 3-hour schedule. Of the patients from whom a positive culture was obtained before treatment 92% were classified as cured after treatment.

[The period of observation in this investigation must be considered to be very short.]

T. Anwyl-Davies

Oral Penicillin in the Treatment of Neisserian Infections. SEAGER L. D., SHOEMAKER, W. G., MULHOLLAND, S., MILIER, R. E., WELLS, G. R., and BARNES, K. B. (1946). *J. Urol.*, 56, 594.

The authors discuss methods of administering penicillin by mouth so as to minimize the destructive effect of the acid of the gastric juice on the drug. Their conclusions are summarized as follows. Penicillin is effective in the treatment of gonorrhoea when given by mouth. Blood level and clinical cure proved that enteric coating and the incorporation of the drug in a vehicle such as lanolinesame or cocoa butter permit satisfactory absorption. By this method, clinical cure in 15 cases was obtained, the percentage comparing favourably with other methods of administration. Three to six times the intramuscular dose was required. Sulphonamide-resistant cases of gonorrhoea were more easily cured by penicillin than were fresh infections.

T. W. Mimpriss

A Case of Acute Generalized Gonococcal Peritonitis (A propos d'un cas de péritonite aiguë généralisée à gonocoques.) GUENIN, R. (1946). *Gynaecologia Basel*, 122, 224.

The literature on generalized gonococcal peritonitis is reviewed and one illustrative case is described.

GONORRHOEA (PATHOLOGY)

The Role of Lens Substance in Experimental Gonorrheal Iritis. DRELL, M. J., BOHNHOFF, M., and MILLER, C. P. (1946). *Amer. J. Ophthalm.*, 29, 1263.

Experiments were undertaken as an extension of studies on experimental gonorrheal iritis in rabbits. [Their practical relevance to clinical iritis in man is problematical; gonorrheal iritis occurs most commonly without lens trauma. As the authors point out, postcataract inflammation, from whatever cause, is always more severe in cases where much soft lens matter is present. The work does suggest that in such cases the effect of the soft matter lies more in its facilitating the multiplication of bacteria than in any inherent toxic effect or immunological reaction.]

A. J. B. Goldsmith

OTHER VENEREAL DISEASE CONDITIONS

Thrombo-angiitis, Phlebitis and Lymphangitis of the Spermatic Cord in Relation to Lymphogranuloma Venereum. COUTTS, W. E., and ZALAZAR, R. V. (1946). *Urol. cutan. Rev.*, 50, 526.

The authors assign their cases to 3 clinical groups: (1) inflammation of vascular elements of the cord only; (2) the same, with inflammation of the caput epididymidis; (3) both these, together with inflammation of the vas and of the rest of the epididymis. The third group is the largest. Vas and vessels are enlarged and tender, and there is usually pan-epididymitis. There is purplish oedema of the inguino-scrotal fold and scrotum, tortuous scrotal veins are seen, and the deep iliac lymph nodes are enlarged and tender. Acute or subacute gonorrhoea is a usual concomitant. In the differential diagnosis of the first group of cases from torsion of the spermatic cord, enlargement and tenderness of the deep iliac lymph nodes are important.

Since the advent of penicillin therapy for gonorrhoea the authors have observed an increase in the number of cases of cord and epididymal involvement. Their explanation of this increase is that sulphonamides in gonorrhoea acts both on viral and coccal infections, so that testicular complications almost disappeared. Penicillin, on the other hand, cures gonorrhoea, but does not attack the lymphogranuloma venereum virus, which may originate genital complications. These are cured on reversion to sulphonamide therapy. The authors conclude that this virus may be responsible for thrombo-angiitis, phlebitis, and lymphangitis of the spermatic cord, and that in cases of gonorrhoeal epididymitis with severe inflammation of the vascular elements of the spermatic cord an associated lymphogranuloma venereum infection must always be suspected, and search made for inflamed deep iliac nodes.

Alex. E. Roche

Studies on the Chemotherapy of Viruses in the Psittacosis-Lymphogranuloma Group. I. Effect of Penicillin and Sulfadiazine on Ten Strains in Chick Embryos. MEIKLEJOHN, G., WAGNER, J. C., and BEVERIDGE, G. W. (1946). *J. Immunol.*, 54, 1.

Several members of the psittacosis-lymphogranuloma-venereum group of viruses have been shown to be susceptible to the action of the sulphonamide drugs and penicillin. Two of the group—a virus (Borg) isolated from an outbreak of pneumonitis in Louisiana and the S-F strain isolated from an outbreak of pneumonitis in San Francisco, both of which are extremely virulent for man—have not previously been studied with regard to susceptibility to sulphonamides and to penicillin. Comparative tests were made on the 6BC and the Gleason strains of psittacosis, the P207 strain of pigeon ornithosis, the Borg strain, S-F strain, the Cal. 10 strain of meningo-pneumonitis, feline pneumonitis, the Greb strain of mouse pneumonitis, the 12XN strain of hamster pneumonitis, and a strain of lymphogranuloma venereum. The dose of virus used was, when

possible, large enough to kill all untreated embryos between the fifth and eighth days after inoculation.

Sulphadiazine in relatively small doses—0.1 to 2.5 mg.—showed therapeutic effects against the two strains of psittacosis, the virus of mouse pneumonitis, the 12XN strain of hamster pneumonitis, and a strain of lymphogranuloma venereum. It had little, if any, effect against the other 5 strains of virus, even when dosage was increased to the limit of toxicity (40 mg.). All 10 strains were susceptible to penicillin. Relatively large amounts—1,250 units—of penicillin were required with the classical psittacosis strains and the two virulent human pneumonitis strains—Borg and S-F. Lymphogranuloma venereum, which is not inhibited by penicillin in the mouse, was inhibited by less than 50 units. It is of interest to note that eggs treated with either drug continued to harbour the virus.

F. O. MacCallum

Studies on the Chemotherapy of Viruses in the Psittacosis-Lymphogranuloma Group. II. Effect of Penicillin and Sulfadiazine on Seven Strains in Mice. WISEMAN, R. W., MEIKLEJOHN, G., LACKMAN, D. B., WAGNER, J. C., and BEVERIDGE, G. W. (1946). *J. Immunol.*, 54, 9.

A number of the strains described in the previous experiments (see above abstract, *J. Immunol.*, 54, 1) had not been tested for their susceptibility to drug treatment by penicillin or sulphadiazine when infecting mice, and tests on seven of them are described here.

Penicillin had a therapeutic effect in mice infected with psittacosis, Borg human pneumonitis, Cal. 10 meningo-pneumonitis, pigeon ornithosis, and mouse pneumonitis when it was given by the subcutaneous route, but not when the oral route was used. This latter failure was probably due to insufficient ingestion or absorption of the drug. Sulphadiazine was effective against only the two strains of psittacosis, the mouse pneumonitis of Nigg and the hamster pneumonitis. The results obtained in mice agreed in each instance with those in chick embryos, although the blood levels in mice, particularly with penicillin, were far lower than those in chick-embryo fluids. These results indicate that effective blood levels may differ greatly in different hosts.

F. O. MacCallum

Isolation of the Virus of Lymphogranuloma Venereum from Twenty-eight Patients; Relative Value of the Use of Chick Embryos and Mice. WALL, M. J. (1946). *J. Immunol.*, 54, 59.

The specimens tested for the presence of virus were biopsy material or aspirations from buboes. Infection in eggs of the first passage, after yolk-sac inoculation, was usually not readily apparent, and elementary bodies were difficult to find. Consequently "blind" passages were often done 7 to 12 days after inoculation. By the second or third passage of positive material, some of the embryos became sluggish and elementary bodies were more easily found. However, numerous bodies did not appear until the fourth or fifth passage, when most of the embryos became moribund in 3 to 4 days.

Young white Swiss mice were used and injected intracerebrally. Those which became sick did so in 3 to 7 days, and if any of a group was ill, usually all were. The virus was isolated from 28 of 33 patients thought to have lymphogranuloma venereum. Virus was isolated altogether 41 times—38 from bubo aspirations, 2 from excised lymph nodes, and 1 from a penile lesion. In mice, virus was isolated from 39 out of 40 specimens tested, mice not being available for one sample. In the yolk-sac the virus was recovered from 32 of the 41 samples. Strains isolated in only one host were readily adapted to growth in the other. The principal fault of the yolk-sac method was the susceptibility of the embryo to bacteria, since 6 of the failures of this method were attributed to bacteria (usually diphtheroids or *Staphylococcus albus*) which did not interfere with the virus isolations in mice. Because of the earlier signs of infection in mice, diagnosis of the virus infection can be made in this animal 5 to 14 days earlier than in the chick embryo. One strain of virus caused illness in mice 3 days after inoculation, at which time elementary bodies were found without difficulty in smears of their brains.

F. O. MacCallum

Isolation of Virus of Lymphogranuloma Venereum from Blood and Spinal Fluid of a Human Being. BEESON, P. B., WALL, M. J., and HEYMAN, A. (1946). *Proc. Soc. exp. Biol., N.Y.*, 62, 306.

The virus of lymphogranuloma venereum has been isolated frequently from inguinal buboes and from genital and rectal lesions; once from the spinal fluid of a patient with meningo-encephalitis, and possibly twice from spinal fluid of two patients suffering from lymphogranuloma venereum. The virus has not previously been reported in the blood of man, though it has been found in the blood of experimental animals. The authors have now isolated the virus from the blood and spinal fluid of 1 of 8 cases of the disease, proved by isolation of the virus from buboes. The 8 patients were young coloured adults, 7 males and 1 female. Virus was isolated from buboes of 4 within the first four days—1 on the sixth day, 1 on the fourteenth day, and 2 on about the twentieth day of the disease. None showed evidence of meningeal involvement, and spinal fluid in all 8 cases gave normal cell counts and protein levels. The virus was isolated from the blood and spinal fluid of the 1 female on the sixth day of disease by inoculation on to the yolk-sac of chick embryos. This patient did not differ clinically from the others. Attempts to isolate virus from the blood and cerebrospinal fluid of the other proven cases were unsuccessful.

F. O. MacCallum

A Bacteriologic Study of the Resistance of Organisms Isolated from Cases of Non-specific Urethritis to Three Chemotherapeutic Agents. WECKSTEIN, A. M., and RASMUSSEN, S. H. (1946). *Mil. Surg.*, 99, 312.

The authors set out to determine the nature of the organisms present in non-gonococcal urethral discharges and to ascertain to what extent these

organisms are resistant to the usual chemotherapeutic agents. They found that a hemolytic *Staphylococcus albus* is present in over 68% of the cases, other organisms being present in lesser proportions. Sixty-five per cent. of all the strains were resistant to penicillin, 69.5% to neomarsphenamine, and 95% to as much as 125 mg. per 100 ml. of sulphadiazine. Though there was no controlled follow-up the doctors treating the patients believed that their results agreed with the authors' *in vitro* findings.

[It would be interesting to know to what extent the organisms isolated in these cases are to be found in the urinary meati of apparently healthy individuals.]
G. L. M. McElligott

Abacterial Pyuria with Special Reference to Infection by Spirochaetes. COUTTS, W. E., and VARGAS-ZALAZAR, R. (1946). *Brit. med. J.*, 2, 982.

The problem of sterile, amicrobial, or abacterial pyuria has been of special interest to these authors, who consider that the correct designation for this syndrome should be "abacterial," and that the syndrome may originate from an ascending or descending infection of the urinary tract by viruses, spirochaetes, or protozoa. Failure to diagnose it has been due to the fact that the centrifuged urinary deposit has not been examined by dark-ground illumination.

According to the present authors' observations the bladder and kidneys may become infected by the ascending or descending routes. Spirochaetal (non-syphilitic) infection of the male and female urethra is not uncommon. The descending infection is usually of the blood-stream type. Spirochaetes have been found in bladder urine in so-called war nephritis, trench fever, relapsing fever, and Weil's disease. The authors consider that the spirochaetes present in their cases were derived from the buccal cavity or the intestine. In all their cases the spirilla were of diverse morphology, some being slender with only a few spirals, while others were very similar to *Sp. dentium*. To demonstrate the presence of these fragile micro-organisms slow and prolonged centrifugation of fresh bladder urine is recommended and the examination of the deposit under dark-ground illumination after the addition of a drop of normal saline at 37° C. which increases the movements of the organisms.

J. Semple

Studies on the Biologic Relationship between the Causative Agents of Syphilis, Yaws, and Venereal Spirochetosis of Rabbits. II. Comparison of the Experimental Disease Produced in Rabbits. MCLEOD, C., and TURNER, T. B. (1946). *Amer. J. Syph.*, 30, 455.

This paper compares and contrasts the course of the disease in rabbits produced by inoculation with *T. pallidum*, *T. pertenue*, and *T. cuniculi*.

It is evident that the 3 types of treponemal organisms are biologically closely related although they are not the same. The reactions produced in the rabbit by the 3 species of organisms have many

features in common: the lesions develop in the same broad sequence and bear a superficial resemblance, and the serological changes are much the same. Although the lesions observed in each disease possessed certain similarities they were distinctive enough to permit differentiation of one infection from the other.

V. E. Lloyd

Studies on the Biologic Relationship between the Causative Agents of Syphilis, Yaws, and Venereal Spirochetosis of Rabbits. I. Observations on *Treponema cuniculi* Infection in Rabbits. McLEOD, C., and TURNER, T. B. (1946). *Amer. J. Syph.*, 30, 442.

The authors report the results of a study, over a 3-year period, of the course of spontaneous spirochaetosis occurring after experimental inoculation of 200 rabbits with *T. cuniculi*. The clinical picture produced by *T. cuniculi* infection was similar in its general features to that of experimental infection with *T. pallidum* in the rabbit. Individual lesions varied strikingly, and although a few resembled those of syphilis and yaws most of them were typical of *T. cuniculi* infection alone.

Lymph-node transfers from rabbits infected by inoculation, both during active infection and after several months' latency, resulted in infection of the recipient rabbit in most instances. In general, the local and systemic lesions, the positive serological reactions a month after infection, and the high degree of immunity to reinoculation with the same species of organism produced a pattern resembling that of experimental infection with *T. pallidum*.

V. E. Lloyd

PUBLIC HEALTH

Some American Ideas on Venereal Disease Control.

WILLCOX, R. R. (1946). *Brit. med. J.*, 2, 825.

The campaign against venereal diseases is being pushed less vigorously in Great Britain than in America, mainly because the British rely almost entirely on voluntary methods. In New York a certificate of freedom from venereal disease is essential before marriage, pregnant women have their bloods tested for syphilis, venereal disease is notifiable, treatment is compulsory, and women arrested for prostitution are subject to examination and treatment. Most cities have a control section, and every effort is made to trace contacts. In Chicago bar-keepers are invited to co-operate and if they do not are liable to be put out of business.

Prophylaxis is not pressed on the civilian, but Service men are well provided for. Some 4,000 reports of contacts or cases are dealt with monthly in Chicago, and, if letters fail, field workers are called in. The tracing of cases for follow-up is done by social workers at the clinics, and 70% of the first 3,000 cases of early syphilis are still under observation.

Propaganda is forceful. Trams and buses carry slogans, and book matches are used for the same purpose. A new type of advertisement is the "juke box," which alternates entertainment reels with control messages, and is provided free. A quarterly periodical entitled *V.D. Topics* is published, and the radio is used for talks. The list of activities would not be complete without mention of the American Social Hygiene Council.

[In spite of these activities it seems probable that venereal disease is more prevalent amongst Americans than among Britons; it is possible that Americans are more promiscuous than Britons, at any rate so far as Service men are concerned.]

T. E. Osmond

Incidence of Yaws and of Venereal Diseases in Lango (Uganda). HACKETT, C. J. (1947). *Brit. med. J.*, 1, 88.

A statistical analysis is made of data compiled from medical reports, out-patient attendance figures, and a serological survey of a gaol population and a station labour force. Two small towns in Uganda—Lira (a yaws area) and Masaka (a syphilis area)—are chosen for comparison, and further facts are forthcoming from the neighbouring town of Kampala itself. A survey of the district in 1931 showed that, of 24,000 children under 15 years of age examined, 3.9% were suffering from active secondary yaws—a condition readily observed in the children of nearly every Lango community. At Masaka congenital syphilis is frequently also seen. A comparison of the out-patient attendances in the two places over a 9-year period shows that at Lira the percentages of the average total yearly attendance were: due to yaws 20.9, to syphilis 1.1, and to gonorrhoea 0.6. At Masaka the percentages were: for yaws 1.6, syphilis 17.5, and gonorrhoea 2.5.

From various surveys it is concluded that in Lango the incidence of venereal disease is low, but that of yaws is very high, and few adults die without having contracted the latter disease.

R. R. Willcox